1.0 INTRODUCTION

In January 1998, the US Environmental Protection Agency (EPA, or the Agency) proposed a Phase II storm water rule that contained provisions for controlling pollutants in storm water discharges associated with certain municipalities and construction sites. EPA's proposal was accompanied by an economic analysis of the potential economic effects of the rule in compliance with Executive Order 12866 and other statutory and legal authorities such as the Small Business Regulatory Enforcement Fairness Act (SBREFA). EPA is currently under court order to finalize the Phase II storm water rule by October 31, 1999.

1.1 Statutory Background

The final rule has changed from the proposal in response to public comment and internal agency review. This document updates the benefit-cost analysis prepared for the proposed rule.

In the 1987 amendments to the Clean Water Act (CWA), Congress established a tiered approach for addressing certain industrial, municipal, and other storm water discharges. These amendments provided for a phased program to address the "worst offenders" first (Phase I), and identify an appropriate second tier of sources at a later date. EPA published Phase I application requirements for categories of storm water discharges recognized as the most damaging to the environment in 1990 (55 Federal Register (FR) 47990, November 16, 1990). Generally, Phase I sources include storm water discharges associated with certain industrial activities, medium and large municipal separate storm sewer systems (MS4s), and large construction sites (greater than five acres).

Phase II storm water sources were to be identified based on EPA's findings as presented in its Report to Congress (US EPA, 1995a). Based on this report, EPA published a direct final Phase II storm water rule in 1995 (60 FR 40229, August 7, 1995). EPA published this rule in part to protect Phase II dischargers from CWA citizen suit liability. However, it was recognized that the Phase II regulatory program would undergo further development. Indeed, the 1999 final rule, when promulgated, will replace the August 1995 direct final rule.

1.2 Description of the Rule

The final Phase II rule requires storm water discharges from small MS4s and small construction sites to be covered under a National Pollutant Discharge Elimination System (NPDES) permit. Small MS4s include incorporated places, counties, and other places under the jurisdiction of a governmental entity (including Tribal and Territorial governments) that are located in an urbanized area but are not included in Phase I. Phase I addresses larger and medium-sized MS4s serving populations of 100,000 and more. Phase II generally pertains to systems serving less than 100,000 people. However, the permitting authority could waive permitting requirements for systems serving less than 1,000 people. Indian reservations located within urbanized areas and with a population of less than 1,000 persons are excluded.

Phase II small construction sites are those that disturb between one and five acres of land. In addition, sites disturbing less than one acre would be subject to regulation if they are part of a

larger common plan of development or sale. However, the NPDES permitting authority could waive permitting requirements under certain conditions.

The Phase II rule does not include any additional regulatory requirements for industrial establishments nor will it expand the universe of industrial establishments.

Owners or operators of small MS4s would be required to develop and implement a storm water management program designed to reduce the discharge of pollutants to the maximum extent practicable and protect water quality. These programs would be required to include, at a minimum, control measures to address requirements for:

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination
- Construction site storm water runoff control
- Post-construction storm water management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations.

Construction site owners or operators would be required to plan and implement appropriate erosion and sediment control best management practices (BMPs) to control storm water discharges from small sites.

1.3 Economic Analysis of the Rule

The analysis presented here updates the benefit-cost analysis prepared for the proposed rule. Revisions have been made primarily in response to internal Agency review and comments received during the public comment period.

A number of issues were raised in the public comments regarding the economic analysis (EA) that accompanied the proposed rulemaking. One was the belief that the analysis was biased toward understating benefits because several of the benefits categories, such as reduced flood damage, were not reflected in the monetized benefits estimate. Another was the belief that the universe of affected municipalities and construction sites would be larger than estimated, resulting in an underestimation of costs. In contrast, commenters also suggested that reducing storm water pollutants would not be sufficient to restore waters (i.e., benefits were overstated) and that costs were overstated. Impacts on smaller municipalities and construction site operators were also discussed, as well as the use of data collected from Phase I municipalities.

Internal EPA review of the analysis resulted in questions relating to the accuracy and completeness of the data underlying the analysis, including data used to estimate the cost of municipal minimum measures (e.g., data on start-up costs and changing costs over time), the number of construction sites between one and five acres, the impairment of water bodies, the number of waivers expected, the amount and cost of monitoring, and the cost and extent of dredging. Another issue identified by EPA related to implementation of the Coastal Zone Act Reauthorization Act Amendments of 1993 (CZARA) and whether both costs and benefits associated with controls in these areas should be considered.
To address the issues raised in the public comments and during internal review, EPA gathered additional data and information to refine the analysis of potential benefits and costs. These data

and analyses are described in detail in the chapters that follow. A large part of the effort was directed to refining the estimates of the number of regulated MS4s and construction sites and better characterizing potential costs based on information from the Phase I storm water program. Efforts were also directed towards more fully capturing the potential benefits associated with the municipal and construction site components of the rule.

1.4 Structure of the Report

This report consists of the following chapters:

- **Chapter 2**, **Environmental Concerns Addressed by the Rule**, discusses the nature of the environmental problems caused by storm water discharges regulated by the rule.

- **Chapter 3**, **Baseline for Estimating Benefits and Costs**, describes the data and issues related to developing a baseline against which benefits and costs can be measured.

- **Chapter 4**, **Potential Costs, Pollutant Load Reductions, and Cost-Effectiveness**, provides revised estimates of the potential costs of compliance with the final rule, the anticipated reductions in pollutants loadings anticipated, and the anticipated cost per pound of pollutant removed.

- **Chapter 5**, **Qualitative Assessment of Benefits**, provides a qualitative discussion of the benefits that are expected to result from the final rule.

- **Chapter 6**, **Quantitative Assessment of Benefits**, provides estimates of the potential magnitude of benefits, where feasible.

- **Chapter 7**, **Comparison of Potential Benefits and Costs**, presents a comparison of the estimated benefits and costs, and discusses uncertainties associated with the analyses.

- **Chapter 8, Revised Analysis for Small Business Regulatory Enforcement Fairness Act, Environmental Justice, and Unfunded Mandates,** provides an update to the screening analysis developed for the proposed rule.

- **Chapter 9, No Exposure,** provides estimates of the net cost savings that will result from implementation of the Phase I no exposure provision.

- **Chapter 10** provides references.

In addition, several appendices provide supporting materials and references.